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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/355,254	02/22/2000	HERMANN WAGNER	C1041/7005	6183

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EXAMINER	
ZARA, JANE J	

ART UNIT	PAPER NUMBER
1635	

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/355,254	WAGNER ET AL.	
	Examiner	Art Unit	
	Jane Zara	1635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 January 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *24,26,27 and 40-70* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *24,26,27,40-45,48,49,51-53,56,59,63,65,68 and 70* is/are rejected.

7)☒ Claim(s) *46,47,50,54,55,57,58,60-62,64,67 and 69* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2-18-04, 1-20-04,*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This Office action is in response to the communication filed 1-20-04.

Claims 24, 26, 27, 40-70 are pending in the instant application.

Response to Arguments and Amendments

Withdrawn Rejections

Any rejections not repeated in this Office action are hereby withdrawn.

Applicant's arguments with respect to claims 24-29 have been considered but are moot in view of the new ground(s) of rejection set forth below.

Rejections Necessitated by Amendments

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 24, 26, 27, 42, 56, 68 and 70 are rejected under 35 U.S.C. 102(e) as being anticipated by Davis et al.

Davis et al (USPN 6,406,705, priority date March 10, 1997) teach a pharmaceutical composition consisting of the polynucleotide sequence of SEQ ID NO: 10 which further comprises a phorphorothioate internucleotide linkage, and which composition further comprises a peptide or polysaccharide antigen, and a pharmaceutically compatible diluent, whereby the polynucleotide comprises a binding site for a transcription factor of a cytokine (See entire document, especially the abstract, col. 3-6, col. 26-30, SEQ ID NO: 89 of Davis et al, and the accompanying sequence alignment data).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 24, 26, 27, 40-45, 48, 49, 51-53, 56, 59, 63, 65, 68 and 70 rejected under 35 U.S.C. 103(a) as being unpatentable over Davis et al as applied to claims 24, 26, 27, 42, 56, 68 and 70 above, and further in view o the combined teachings of Hinrichs et al, Dolganov et al, Stanford et al, Levy et al, Green et al, Ono et al, Cha et al, Harada et al and McKnight et al.

The claims are drawn to a pharmaceutical composition comprising at least one polynucleotide sequence of a binding site for a transcription factor, selected from the group consisting of SEQ ID NO: 8-13, 17, 19 or 21-23, and further comprising at least one antigen, a pharmaceutically acceptable carrier or diluent, and which polynucleotide comprises at least one phosphorothioate internucleotide linkage.

Davis is relied upon as described in the 102 rejection above.

Davis does not teach pharmaceutical compositions comprising or consisting of SEQ ID NO: 8, 9, 11-13, 17, 19 or 21-23.

Hinrichs et al (USPN 5,641,486 June 24, 1997) teach a pharmaceutical composition comprising the polynucleotide sequence of SEQ ID NO: 8 and a pharmaceutically compatible diluent (e.g. water), whereby the polynucleotide comprises a binding site for a transcription factor of a cytokine (See especially the abstract and

SEQ ID NO: 2 of Hinrichs et al and the sequence alignment data provided in the Office action mailed 7-25-03).

Dolganov et al (Blood 87(8): 3316-26, 1996) teach a pharmaceutical composition comprising the polynucleotide sequence of SEQ ID NO: 9 and a pharmaceutically compatible diluent (e.g. water), whereby the polynucleotide comprises a binding site for a transcription factor of a cytokine (See especially figure 2 on page 3319 and the sequence alignment data provided in the Office action mailed 7-25-03).

Stanford et al (Immunogenetics 35:408-11, 1992) teach a pharmaceutical composition comprising the polynucleotide sequence of SEQ ID NO: 17 and a pharmaceutically compatible diluent (e.g. water), whereby the polynucleotide comprises a binding site for a transcription factor of a cytokine (See especially figure 2 on page 409, last two paragraphs on page 410, and the sequence alignment data provided in the Office action mailed 7-25-03).

Levy et al (USPN 5,616,489, April 1, 1997) teach a pharmaceutical composition consisting of the polynucleotide sequence of SEQ ID NO: 19 and a pharmaceutically compatible diluent (e.g. water), whereby the polynucleotide comprises a binding site for a transcription factor of a cytokine (See especially the abstract and SEQ ID NO: 12 of Levy et al and the sequence alignment data provided in the Office action mailed 7-25-03).

Green et al (WO 96/17960, 13.06.1996) teach a pharmaceutical composition consisting of the polynucleotide sequence of SEQ ID NO: 13 and a pharmaceutically compatible diluent (e.g. water), whereby the polynucleotide comprises a binding site for

a transcription factor of a cytokine (See especially the abstract, page 3, pages 13-18, Accession No. AAT32689 of Green et al and the sequence alignment data provided in the Office action mailed 7-25-03).

Ono et al (WO 96/12823, 02.05.1996) teach a pharmaceutical composition comprising the polynucleotide sequence of SEQ ID NO: 12 and a pharmaceutically compatible diluent (e.g. water), whereby the polynucleotide comprises a binding site for a transcription factor of a cytokine (See especially the abstract, example 4 on page 42, and Accession No. AAT18820 of Ono et al and the sequence alignment data provided in the Office action mailed 7-25-03).

Cha et al (J. Biol. Chem. 269(7): 5279-87, 1994) teach a pharmaceutical composition comprising the polynucleotide sequence of SEQ ID NO: 22 and a pharmaceutically compatible diluent (e.g. water), whereby the polynucleotide comprises a binding site for a transcription factor of a cytokine (See especially the figure 1 on page 5281, figure 3 on page 5282, Accession No. L24442 of Cha et al, and the sequence alignment data provided in the Office action mailed 7-25-03).

Harada et al (USPN 5,834,188, Nov. 10, 1998) teach a pharmaceutical composition comprising the polynucleotide sequence of SEQ ID NO: 11 and a pharmaceutically compatible diluent (e.g. water), whereby the polynucleotide comprises a binding site for a transcription factor of a cytokine (See especially the abstract, col. 2-5, col. 25-26, SEQ ID NO: 2 of Harada et al and the sequence alignment data provided in the Office action mailed 7-25-03).

McKnight et al (USPN 5, 591,825, Jan. 7, 1997) teach a pharmaceutical composition consisting of the polynucleotide sequence of SEQ ID NO: 21 and a pharmaceutically compatible diluent (e.g. water), whereby the polynucleotide comprises a binding site for a transcription factor of a cytokine (See especially the abstract, col. 10, claims 1-3, and SEQ ID NO: 3 of McKnight et al, and the sequence alignment data provided in the Office action mailed 7-25-03).

It would have been obvious to one of ordinary skill in the art to make pharmaceutical compositions comprising at least one polynucleotide sequence of a binding site for a transcription factor, selected from the group consisting of SEQ ID NO: 8-13, 17, 19 and 21-23, and further comprising at least one antigen, and a pharmaceutically acceptable carrier or diluent, which polynucleotide comprises at least one phosphorothioate internucleotide linkage because Davis taught a composition comprising the polynucleotide sequence of SEQ ID NO: 10, which comprises a binding site for a transcription factor and phosphorothioate internucleotide linkages, and which composition further comprises a peptide or polysaccharide antigen, and a pharmaceutically compatible diluent. In addition, Hinrichs et al, Dolganov et al, Stanford et al, Levy et al, Green et al, Ono et al, Cha et al, Harada et al and McKnight et al teach polynucleotide sequences comprising a binding site for a transcription factor of a cytokine, namely of SEQ ID NOS: 8, 9, 11-13, 17, 19 and 21-23. One of ordinary skill in the art would have been motivated to make these pharmaceutical compositions because the polynucleotide sequences comprising binding sites for transcription factors for cytokines, in combination with an antigen and a compatible diluent, provide for

immunological modulation (including adjutancy) in an organism, as taught previously by Davis et al, and the polynucleotide sequences claimed each comprise a CpG motif that had been taught previously by Davis et al to enhance immunomodulation. One of ordinary skill in the art would have expected that the polynucleotides - taught previously by Davis, Hinrichs et al, Dolganov et al, Stanford et al, Levy et al, Green et al, Ono et al, Cha et al, Harada et al and McKnight et al, wherein each polynucleotide contains a binding site for a transcription factor for a cytokine, and some contain a CpG immunomodulatory motif as previously disclosed by Davis – would have enhanced immunomodulatory effects because of the CpG motifs as well as the transcription factor binding sites. One of ordinary skill in the art would have been motivated to make compositions comprising these polynucleotide sequences to enhance immunomodulation upon administration in an organism, as had been taught previously by Davis. And one of ordinary skill in the art would have been motivated to incorporate phosphorothioate modifications into the polynucleotides because it had been taught previously in the art by Davis and others that such internucleotide modifications provide enhanced stability and cellular uptake of polynucleotides. One of ordinary skill in the art would have expected that these compositions would provide enhanced immunoadjuvancy and would modulate cytokine release following their administration. Therefore, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made.

Allowable Subject Matter

Claims 46, 47, 50, 54, 55, 57, 58, 60-62, 64, 66, 67 and 69 appear free of the prior art of record. These claims are objected to because they depend from a rejected claim.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Certain papers related to this application may be submitted to Art Unit 1635 by facsimile transmission. The faxing of such papers must conform with the notices published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 C.F.R. § 1.6(d)). The official fax telephone number for the

Group is **703-872-9306**. NOTE: If Applicant *does* submit a paper by fax, the original signed copy should be retained by applicant or applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED so as to avoid the processing of duplicate papers in the Office.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jane Zara** whose telephone number is **(571) 272-0765.** If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John LeGuyader, can be reached on (571) 272-0760. Any inquiry regarding this application should be directed to the patent analyst, Katrina Turner, whose telephone number is (571) 272-0564. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

RAM R. SHUKLA, PH.D.
PRIMARY EXAMINER

JZ
3-20-04